



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,022	12/11/2003	M. Dalil Rahman	2003US312	2346

7590 04/20/2006

Sangya Jain  
Clariant Corporation  
70 Meister Avenue  
Somerville, NJ 08876

EXAMINER
----------

CHU, JOHN S Y

ART UNIT	PAPER NUMBER
----------	--------------

1752

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/734,022

Applicant(s)

RAHMAN, M. DALIL

Examiner

John S. Chu

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,8-16,18-21 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,8-16,18-21 and 24-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/18/05</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This Office action is in response to the amendment filed February 1, 2006.

1. The rejection under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn in view of the amendment including a comonomeric group.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

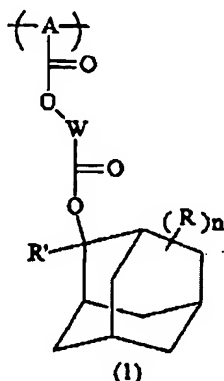
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 8-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over NISHIYAMA et al (2004/0063827) in view of LEE et al (7,022,458).

The claimed invention is now drawn to the following:

Art Unit: 1752

1. (currently amended) A photoresist composition comprising a photoacid generator and a polymer comprising at least one unit derived from a cyclo olefin monomer and, at least one unit as described by structure 1,



where, A has the structure



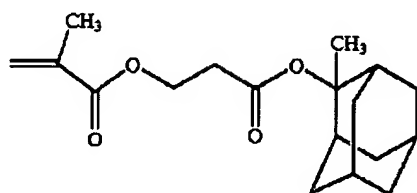
where  $R_1'$ ,  $R_1''$  and  $R_1'''$  are independently hydrogen, (C<sub>1</sub>-C<sub>6</sub>) alkyl or cyano, and Y is X, C(O)OX, OX, where X is an aliphatic (C<sub>1</sub>-C<sub>6</sub>) alkylene group, and m is 0 or 1,

W is a (C<sub>1</sub>-C<sub>6</sub>) linear or branched alkylene group,

R is independently selected from substituted hydrocarbyl group, unsubstituted hydrocarbyl group, hydrogen, hydroxyl, and (C<sub>1</sub>-C<sub>10</sub>)alkyl,

R' is hydrogen or (C<sub>1</sub>-C<sub>6</sub>) alkyl, and n=1-8.

NISHIYAMA et al teaches a positive resist composition wherein the resin used in the composition discloses and suggests a monomeric group defined as the following:



Ie-25

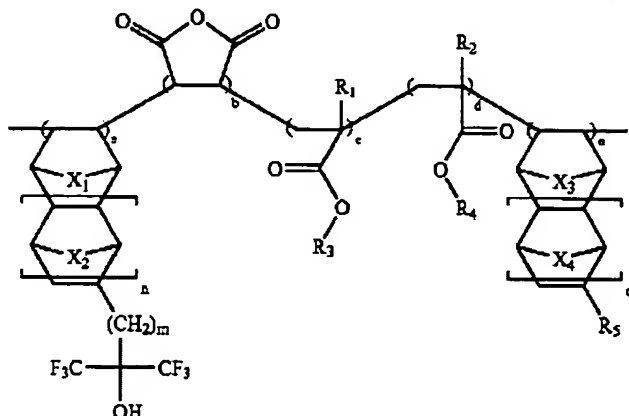
. This structure teaches the claimed monomeric unit as described in claim 1, see subparagraph [00079].

Art Unit: 1752

NISHIYAMA et al lacks a working example using the claimed monomeric group in a copolymer with the now claimed unit derived from a cyclo olefin monomer.

LEE et al discloses a photoresist polymer comprising the following terpolymer

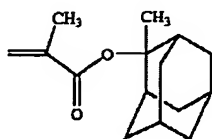
Formula 1



which teaches the use of

cyclic olefin monomer groups used in a terpolymer with the adamantyl acrylate monomers. The adamantyl acrylate monomers are disclosed in NISHIYAMA et al to be functionally equivalent to the monomeric Ia-25 units seen above. Note Ia-1 in page 7 paragraph [0079] in NISHIYAMA

Ia-1



et al seen here:

It would have been *prima facie* obvious to one of ordinary skill in the art of photoresist composition to use the monomeric group of Ia-25 in place of the adamantyl acrylate monomeric group in the resin of formula 1 in LEE et al with the reasonable expectation of same or similar results with respect to excellent etching resistance, thermal resistance and adhesive properties taught in LEE et al.

Art Unit: 1752

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. FUJIMORI et al (2004/0253538) is cited of interest as disclosing a copolymer having a norbornene comonomer and an acrylate monomer as claimed, however the reference is not prior art based on it having a later filing date.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

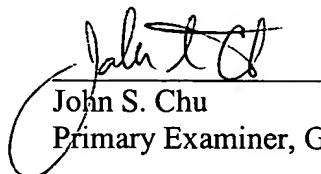
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Cynthia Kelly, can be reached on (571) 272-1526

The fax phone number for the USPTO is (571) 273-8300.

Art Unit: 1752

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John S. Chu  
Primary Examiner, Group 1700

J.Chu  
April 11, 2006